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A

PATHOLOGICAL AND PHILOSOPHICAL

ESSAY

ON

HEREDITARY DISEASES.

WITH

AN APPENDIX,

ON

INTERMARRIAGE,

AND

THE INHERITANCE OF THE TENDENCY TO MORAL
DEPRAVITIES AND CRIMES.

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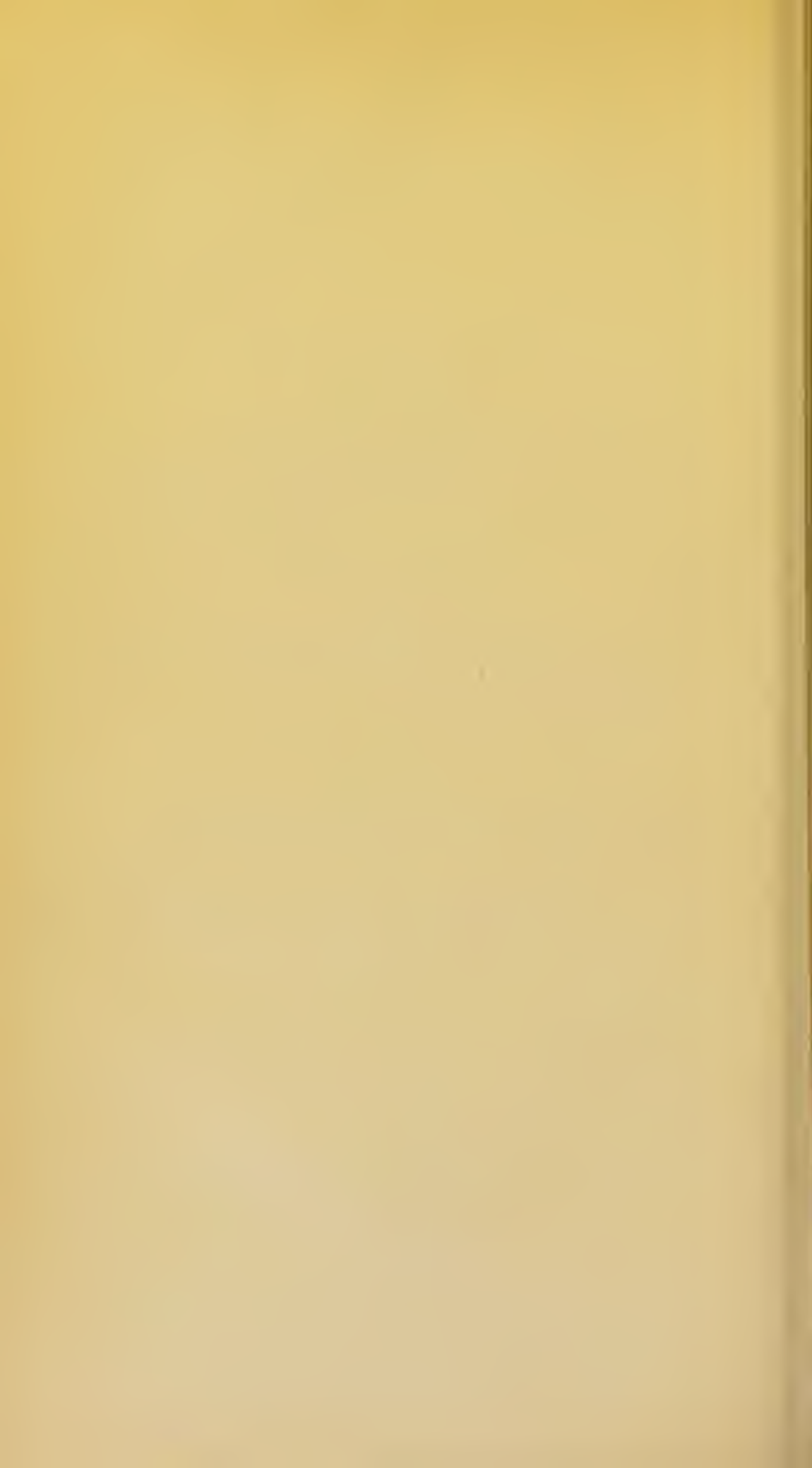
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TO
THOMAS HODGKIN, M.D.
&c. &c. &c.
AS A TOKEN OF SINCERE RESPECT FOR HIS HIGH PROFESSIONAL
ATTAINMENTS,
AND OF THE HIGHEST ESTEEM FOR HIS UNREMITTING
PHILANTHROPIC EXERTIONS,
AS WELL AS
A HEARTFELT ACKNOWLEDGMENT OF GREAT PERSONAL KINDNESS,

THIS SMALL ESSAY
IS INSCRIBED,
BY HIS MUCH OBLIGED AND TRULY GRATEFUL FRIEND,

THE AUTHOR.

August, 1843.



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PREFACE.

THE highly-important and interesting doctrine of the Inheritance of Diseases, with regard to Pathology and Philosophy, as well as in other manifold relations, invited and riveted my attention and meditation, at my first entering into the study of Medicine. Some years ago I published in Germany, as the fruit of my first exertions, the following Essay; in which I endeavoured to consider, *systematically*, and in succession, the *main points* on which depend the examination of this important theme; to collect the opinions and experience of the most celebrated Practitioners; and to compare the same with my own notion and practice. The Essay met in Germany with a very favourable reception, and with far better success than I had anticipated. Now residing in England, I venture to lay this Essay, considerably retouched, provided with new observations, and augmented with some recent facts, in English, before an honoured public: and should my inmost wish be fulfilled, and this little Treatise also meet in these dominions—which may be justly proud of many distinguished men in every branch of human knowledge—with no unfavourable reception, it will then serve me as a good omen and an encouragement to

continue, in spite of all difficulties, my inquiries in this my favourite study : and perhaps, at a later period, if God spare my life and health, I may be enabled to publish a better and more copious work, as the result of my continued researches and observations. No one is more sensible of the defects of this little work than myself ; and it seems superfluous to declare, that it could not be my design to exhaust, in these few pages, a field so extensive as that of Hereditary Diseases. Willingly would I have now refrained from publishing this Essay, and, according to my former views, waited until I had been more enabled to extend my investigations, and to bring to light a work more deserving, and more suited to this important object. But time and circumstances, and chiefly hardships and toils of every kind, created by several journeys, have, of later years, hindered me from studying and quietly investigating these points ; and weighty reasons exist for not delaying any longer the publication of this Essay in the English Language ;—"Ars longa, vita brevis est."

I have furthermore endeavoured to exhibit all points in a manner as popular and comprehensive as possible, so that these pages may become interesting to every well-educated man, whether a physician or not : since it cannot be doubted, that the doctrine of the Inheritance of Diseases is as important and interesting to the philosopher, the lawyer, and every well-informed head of a family, as it is to the physician himself. The practitioner in medicine will surely not censure me for having omitted in these

pages the treatment and possible preventive means for these diseases: and persons not learned in the healing art must consider, that the treatment of any hereditary disease, if once in existence, can be no other in reality than if the disease were not hereditary: he will thus not be able to cure himself without the assistance of a physician; and whatever regards preventive means, supposing that they might sometimes be taken, they should also be used in every case according to the different nature of the threatening evil: and even then, the person not learned in the healing art cannot be guided aright without professional advice. I believe that I have not altogether omitted any thing important, as regards the nature and the character of these diseases in general.

I also published some years ago, in a German Journal which is most extensively circulated, the Appendix, "On the Inheritance of the Tendency to Moral Depravities and Crimes." I herewith annex the same to these pages; because I am of opinion, that both, viz. the doctrine of the inheritance of the tendency to moral depravities and crimes and that of the inheritance of bodily diseases, stand in close connexion with each other; and that the time will certainly come, when the influence of the healing art on the education and the morality of every citizen will be better understood and more fully appreciated.

In conclusion, I must request the indulgence of the lenient Reader with regard to the language in this little work.

Born in a foreign land, I have not yet been able, with all my endeavours, to master the genius of the English language: and although my friend Mr. Cassierer, whom I publicly thank for his kindness, has undertaken the trouble of examining and correcting my style, yet it was not in his power (since he had not time to transcribe the whole anew) to correct the language so far, that perhaps the foreigner may not be detected in every page. I hope, nevertheless, that the kind Reader will grant me for these defects his willing forgiveness.

LONDON, *July* 1843.

ON HEREDITARY DISEASE.

SECTION I.

OF HEREDITARY DISEASES GENERALLY.

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“Maxima ortus nostri vis est, nec parum felices bene nati.”

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FERNELIUS.

Of the actual existence of hereditary diseases.

§. 1.

EXPERIENCE incontestably shews, through all ages—and the most renowned physicians, as well as other competent writers, have given it as their opinion—that, as children generally resemble their parents in outward form, in figure, features, voice, colour of the hair and eyes, &c., also in their mental capacities and dispositions, in temper, inclinations, and their moral character generally—and as they inherit the virtues and vices of their parents, modified only by education, instruction, and the spirit of the times in which they live—so they inherit, in most cases also, the diseases of their parents: and consequently there exist diseases which themselves, as well as the disposition thereto, are transferred from the parents to their children, from the latter again to their own issue; and thus constitute an heir-loom in a family, to the misfortune of many generations.

§. 2.

In the sacred volume of the Old Testament we find several passages which distinctly allude to this truth; and the passage contained in Exodus xxxiv. 7. where the

Almighty describes himself as "visiting the iniquity of the fathers upon the children, and upon the children's children unto the third and fourth generation," appears to have been very rightly explained by some commentators, who say that many diseases which parents have acquired through a sinful life are frequently communicated by them to their offspring. It is also urged, that there is a divine command that near relations should not intermarry, to prevent diseases which prevail in a family from becoming strongly and for a long time established; from spreading over too many of its members; and to cause that the race may be renewed, as it were, by members of different families intermarrying. With the same view Ludwig Mercatus says¹: "*Parentes duo ex eâdem familiâ descendentes nunquam connubio jungi debent*²." Amongst the Grecian physicians, Hippocrates, the Father of Medicine, was well acquainted with hereditary diseases; and hereafter we shall often have an opportunity of quoting from his writings, which will more clearly shew what he thought on this subject. Almost all physicians and philosophers of antiquity were of his opinion: and the Roman proverb, "*Capitones a capitonibus, pulmiones a pulmionibus*," is well known: and instead of many others, the following beautiful verses from Horace may yet here find a place:

"Fortes creantur fortibus et bonis,
Est in juvenis, est in equis patrum
Virtus, nec imbellem feroces
Progenerant aquilæ columbam."

Since the restoration of sciences, to the present time, the existence of hereditary diseases has been acknow-

(¹) See the Note on the Influence of Intermarriage in the Appendix.

(²) *De Morbis Hereditariis, tractatus unicus ad calcem operum ejus*, tom. ii. p. 673.

ledged by Fernelius³, Ludwig Mercatus⁴, Boerhaave⁵, Stahl⁶, F. Hoffmann⁷, Tissot⁸, Haller⁹, Van Swieten¹⁰, Gaubius¹¹, Hartmann¹², Reil¹³, C. Sprengel¹⁴, Portal¹⁵, Jos. Adams¹⁶, not to mention many others. Indeed, there are so many cases of hereditary diseases, so many facts to prove their existence have been handed down to us by the writers of past ages, and we ourselves with a little discernment are able to collect so many cases which tend to confirm this opinion, that we can only wonder how it was possible that professional men could ever deny this established truth. There were only two writers of note who do not subscribe to this opinion, viz. the celebrated French surgeon Louis, and Medicus; the first of whom, on the occasion of the Academy of Sciences at Dijon having decreed a prize for the best Dissertation on this subject, endeavoured, in a Treatise published in 1748, to refute the opinion of the existence of hereditary diseases. But Portal justly remarks of this Treatise, that it was more ingeniously than judiciously written¹⁷. It cannot be denied, that many diseases have been considered hereditary which were by no means such, but which were only

(³) De Morborum Causis. (⁴) L. c.

(⁵) Aphor. de Cognoscend. et Curand. Morbis.

(⁶) Diss. de Hereditariâ Dispositione ad varios Adfect.

(⁷) Diss. de Adfect. Heredit. earumque Origine.

(⁸) Maladies des Nerfs. (⁹) Physiologiæ Elementa.

(¹⁰) Comment. in H. Boerhaave Aphor.

(¹¹) Institut. Pathologiæ.

(¹²) Pathologia generalis. (¹³) Ibid.

(¹⁴) Institut. Pathologiæ generalis.

(¹⁵) Considération sur la Nature et le Traitement des Malades de Famille, and des Maladies Héréditaires. Par A. Portal. Troisième édition, Paris, 1814.

(¹⁶) A Philosophical Dissertation on the Hereditary Peculiarities of the Human Constitution, &c.

(¹⁷) "Mais ce qu'il a dit contre cette opinion est plus ingénieux, que fondé en raison." PORTAL, l. c.

caused by detrimental influences, to which the parents and their children were equally exposed. And particularly have the so-called family diseases (*morbi familiares*), of which we soon shall speak, been often mistaken for hereditary diseases (*morbi hereditarii*).

DIFFERENCE BETWEEN HEREDITARY DISEASES (*MORBI HEREDITARII SEU CONGENITI*) AND INNATE DISEASES (*MORBI ADNATI SEU CONNATI*).

Of family diseases (morbi familiares).

§. 3.

If a disease be communicated by parents to their children before their birth, and by these again to their offspring, and so on, such a disease is called an hereditary disease (*morbis hereditarius seu congenitus*¹); and must be distinguished from those which are called innate (*morbi connati seu adnati*); though the ancient writers have made no difference between them, but used both denominations indiscriminately, and thus confounded the ideas connected with them.

Authors certainly do not agree in their opinions about the exact difference between hereditary (*morbi hereditarii*)

(¹) Most authors make use of this appellation; and indeed it is the fittest one for characterizing these diseases. It has been said, the name of hereditary diseases is incorrect, as we can only call that an heritage which the first owner does afterwards no longer possess; but this objection has been rejected by pathologists.

Some Latin writers are inclined to make a difference between *morbis hereditarius* and *congenitus*. The first, they say, is a disease that has already passed through several generations, namely, a disease that was inherited by an individual from his parent, and communicated by him to his own descendants, by these again to theirs, and so on: *morbis congenitus* they apply to a disease inherited by an individual from his parents, in whom it originated. But this distinction also has been considered as too subtle. It is certain, that all diseases which are classed among the hereditary may also be acquired (*morbi acquisiti*), though many writers maintain that several of these diseases now exclusively exist as hereditary.

and innate diseases (*morbi connati*); but as it would lead too far here to mention the different definitions given by many pathologists, we will only observe, that such diseases are most aptly comprehended under the appellation of hereditary, as have already existed in the parents, and were communicated to the child, *ab initio*, by the father or mother, or afterwards, by the mother only, during the progress of foetal development. Innate diseases are those with which neither of the parents was affected, but were acquired by the fœtus during its stay in the uterus, in consequence of outward noxious influences which operated upon it through the mother, without creating in her a disease similar to that which manifests itself in the child after its birth. These influences may be of a mechanical nature, such as pressure, a thrust upon the pregnant uterus; or of a dynamic or psychological kind. One or other of such influences, as also bad regimen of the mother during pregnancy, is very likely the cause of the so-called anomalies in the first formation, and of many others, which are founded upon an irregular, perverted, or immoderately operating process of formation; also of all those anomalies which are commonly considered as the consequences of the vulgarly-styled reception of a fright during pregnancy, and which, according to many celebrated men, cannot entirely be denied²: lastly, of all those different maladies which more recent authors believe they

(²) Although this object does not peculiarly belong to our theme, I may be allowed to relate here the following remarkable case, which Dr. Little communicated to me, and which may also be seen in his excellent Essay on Club-feet. An accomplished and talented lady, the wife of a gentleman holding a prominent public situation, once saw, when pregnant, a beggar with a club-foot, whom she much pitied. But although she did not attach to the circumstance the importance usually attributed by mothers, she was in due time delivered of a child with a club-foot, quite similar to that of the beggar. — See “A Treatise on the Nature of Club Feet,” &c. by W. J. Little, M.D. London, 1839. p. 16 and following.

have discovered in the fœtus, and with which the mother herself was not affected.

Many writers call no diseases hereditary which are not communicated to the embryo at the very moment of conception; whilst they comprehend under the name of innate diseases all those that are communicated to the fœtus whilst in the uterus. But this definition appears unsatisfactory, as it is not at all proved that diseases, which are deeply seated in the reproductive system, cannot be communicated to the fœtus by the mother during pregnancy, especially during the first period, whilst the formation of the fœtus is not yet finished. On the contrary, this opinion is confirmed by many facts.

§. 4.

Though we have come to the conclusion that the difference between hereditary and innate diseases consists in the first being such as have already existed in the parents, still it cannot be denied that it has been observed by many writers, and experience daily teaches, that many diseases of the parents appear in a different form in their children; namely, many parents affected with syphilis have scrofulous, impetiginous—in one word, eacheetic children¹: but these diseases are nevertheless to be called hereditary; for they actually already existed in the parents, but they unfolded themselves in the children in another form. On the other hand, we are to exclude from the hereditary diseases all those with which the

(¹) This will not appear at all strange when we consider how frequently diseases, differing among themselves, as epilepsy, mental diseases, and even apoplexy, originate from the same inward cause; and Portal therefore says, “*Souvent encore les maladies héréditaires se remplacent les unes par les autres . . . on a vu dans la même famille un enfant maniaque, et l’autre épileptique.*” l. c.

child is affected, even from its birth, but which have neither in any congenial form, nor in predisposition, existed with the parents. These we place among the innate, as well as those which the fœtus has acquired through a morbid condition of the mother's body, as it were, through a bad condition of the soil in which the fruit is to germ, to ripen, and to thrive. According to some, it is proved, by experience, that the perfect and sound, or the imperfect and unsound state of the embryo depends upon the mental and bodily disposition of the parents at the time of conception, and on other circumstances connected with that event. Thus it has been observed, that those children are generally weak in mind who are begotten during a state of intoxication. Diseases which take their origin from such causes, seeing that they have not existed in the parents, must be classed with those which are comprehended under the name of innate², and not under that of hereditary diseases.

§. 5.

Jos. Adams justly separates from the hereditary diseases family diseases (*morbi familiares*); under which denomination we comprehend those which affect several members of one and the same family, particularly several brothers or several sisters; but which are neither inherited from their parents, who were free from them, nor are communicated farther to their own children. These diseases are often occasioned by a bad regimen, more or less easily to

(²) See *Lehrbuch der Gynæcologie* von Carus, t. ii. p. 1114.—*Die Krankheiten des Fœtus* von Dr. J. Krætzner: Breslau, 1837.—C. W. Hufeland, *die Krankheiten der Neugeborenen*. Hufeland's Journal, Jan^r. 1827. i. 64.—Diseases which the child acquires during the delivery of the mother must undoubtedly be placed among the *morbi connati*.

be discovered, to which the children were subjected in their earliest infancy, and are thus caused by noxious influences to which they were all equally exposed. The late celebrated physician Heim, in Berlin, mentions a case which came under his notice in the course of his practice, in which the children of the same mother always died of trismus neonatorum a few days after their birth; till he succeeded in tracing out the cause, which consisted merely in the position of the cradle between the door and the window, by which arrangement the children had constantly been exposed to a current of air. At the fourth delivery of the mother, the cradle having been removed to another place, the child remained unattacked by this dreadful evil. Very often these family diseases are of such a nature, that they cause the early death of the individuals they attack; but if they be not mortal, like ophthalmia, which we meet with as a family disease (and which is to be distinguished from ophthalmia hereditaria, and from innate deafness), or barrenness, which is often common to several sisters, and which Portal also places among the family diseases, then they can certainly be communicated by the individuals affected with them to their progeny, in which case they are changed into hereditary diseases. The same is the case with the innate diseases; they also can turn into hereditary ones: but still, according to the opinion of the most acute observers, we must make the following very important distinction:—diseases inherited by parents are not always, but in most cases, again inherited by their children, and so on through many generations; but the innate and the family diseases also can certainly, as we have just said, be inherited by the children of those who labour under them, and thus become real hereditary diseases: but still, this is not so frequently the case.

From what we have stated, we see how important it is to separate innate and family diseases from those called hereditary.¹

NOT ONLY THE DISPOSITION, BUT THE DISEASE ITSELF CAN BE
HEREDITARY.

On the transition of the disposition into the disease itself.

§. 6.

Authors also do not agree in their opinions as to whether it is merely the disposition to a disease, or the disease itself, which is hereditary; and whilst some maintain that it is only the disposition to the diseases which is always communicated by the parents to their children, others are of opinion that in many cases the disease itself is inherited. To give weight to their opinion, the latter

(¹) Gaubius and Portal also place among the hereditary diseases those which children acquire by the milk of their mother or nurse; whilst other authors do not consider such as hereditary. But this difference of opinion depends, as we must have already observed, upon the view we take of the manner in which diseases must be communicated by parents to children, to constitute them as hereditary. It is, moreover, a question, whether it be proved by experience, that diseases, exclusively reckoned among the hereditary, are communicated to children through the medium of the milk, and especially that of a nurse. Neither our own experience nor the records of former writers furnish us with examples sufficiently clear to prove this opinion; whilst many celebrated authors maintain the contrary. Hom and Kluge set it down as a fact, that the milk of syphilitic women is not syphilitic; but Delisle effected the cure of a syphilitic child by having it suckled by a she-goat which had daily one drachm of ung. hydr. rubbed in till it caused salivation. These two facts, of which the latter appears in some measure to contradict the former, especially when we consider the similarity between a mercurial and syphilitic dyscrasy, together with many other reasons, furnish much occasion for inquiry with respect to our subject, and have, therefore, been thought worthy of being mentioned here.

The endemic diseases, *i. e.* endemic struma, cretinismus, &c., have already been expunged by F. Hoffmann, and other ancient writers, from the hereditary diseases.

appeal to experience, by which it is proved that many children are born with diseases under which their parents laboured. Thus Kerkring mentions an example of a woman affected with jaundice, being delivered, in the eighth month of her pregnancy, of a still-born child, whose very bones had a yellow colour. Epileptic women often have children who very soon after their birth are attacked by the same dreadful evil. There are, especially, numerous examples of children being born with deformities and disorders in external parts, of which their parents likewise suffered. When we now further consider how often it may happen, according to the opinion of celebrated pathologists, that the very disease, not merely the disposition to it, remains for some time, as it were, latent in the organism, before it shews itself by certain symptoms, after having been roused either by itself or through additional causes, then the number of inherited diseases will certainly be greatly enlarged. This opinion, also, is not at all contrary to reason; at least it does not appear why the communication of the disease itself should be more difficult to be understood than that of the mere disposition thereto; and we shall have opportunity of shewing, in the course of this treatise, how differently the manner in which diseases are inherited has been explained. It seems, therefore, the more advisable to follow the opinion of those who say, that not merely the disposition to a disease, but the disease itself, is inherited; which opinion has also been seconded by pathologists, such as Hartmann, Conradi, and others.

The question, how it happens that sometimes the disposition only, and sometimes the disease itself, is communicated, must, like many others, for the present remain unanswered. One thing we know by experience, that deformities generally, and especially anomalies in the external parts, as varus, supernumerary fingers, &c.; also

diseases of the eye, chiefly cataract¹, if inherited, are brought into the world with the children; but that of other diseases, especially of many so-called internal diseases, the mere disposition only is more frequently inherited; though there exist many examples to the contrary, in both cases; as, for instance, the case mentioned by Kerkring.

Perhaps we may venture to suppose, with respect to many internal diseases, that it often depends upon the more or less high stage to which the disease has risen in the parents, whether they communicate to their children merely the disposition or the disease itself.

§. 7.

In cases where the disposition only has been transferred, though its existence often shews itself by certain symptoms, still it frequently develops itself into perfect disease only at that very period of life in which the parents, from whom the disposition was inherited, were affected by it; and mostly in those stages of life to which these diseases are peculiar, and at which they appear even without being the fruit of an inherited disposition. Thus the disposition to phthisis develops itself in youth; that to hypochondria or gout in manhood, &c. Nevertheless, there are cases recorded which shew that the unfolding of the disposition to perfect disease is not strictly confined to the periods just mentioned: thus F. Hoffmann saw a child five years of age, and Lentilus one of nine years, suffering with hereditary hæmorrhoids; and both of them met with individuals of from nine to twenty years old labouring under gout. Carus also has seen persons attacked at an early age with hereditary epilepsy and gout; and similar examples have been noticed by various other

(¹) Carus (l. c.) quotes from Lusardi (*Journal Universel des Sciences Médicales*, tom. xxv. Janv. 1822. p. 127) a case where the children of a man who laboured under a cataract were all born with this disease.

writers. It is very often the case, that the disease only shews itself again in the grandchild; the father or mother having inherited the disposition in only a slight degree, which remained latent with them, and did not ripen into disease, not having been excited by additional causes¹.

§. 8.

Another point, about which authors differ in their opinions, is, whether accessory causes, namely, external noxious influences, are always required to make the inherited disposition pass into disease. Some maintain that these are always necessary: others say, that, notwithstanding the greatest precaution taken in keeping off all external influences, the hereditary disposition cannot be prevented from passing, at the proper period, into real disease: and Adams², who is of the latter opinion, makes in this respect a difference between *disposition* and *predisposition*. He calls it 'disposition,' if it exists in such a degree that it ripens at the proper period into disease, without any assisting causes; and 'predisposition,' if it only exists in a slight degree, and does not develop itself into disease without being aided by additional causes. We do not, however, feel disposed to allow of this distinction, as it is clearly proved by the greatest pathologists that no disposition, however strong it may be, can pass into real disease without the existence of accessory causes; and it would be difficult to understand why the hereditary disposition should make an exception. We will grant that the least external influences suffice to cause the hereditary disposition, if such exists in a high degree, to develop itself into perfect disease; and perhaps it was by such imperceptible influences that the disposition was

(¹) "Silente sæpe morbo in genitore, dum ex ævo derivatur in nepote."
Boerhave, l. c.

(²) L. c.

ripened into disease, in those cases which are mentioned in support of the opinion that no accessory causes are required for this end.

§. 9.

It remains for us here to consider the question, whether those diseases under which parents laboured long before or long after the birth of their children are to be considered as hereditary, when we have reason to apprehend that their children have inherited the disposition to them? —for in these cases there can be much less question of a communication of the disease itself. Rougemont answers to it in the negative; but Reil and others maintain that they are hereditary; and we ourselves feel inclined to consider them, *à priori* and *à posteriori*, as such. We have already had, in §. 6, an opportunity of observing that the hereditary disposition, and frequently also any other disposition, can remain for a long time, as it were, slumbering in the body: we find, therefore, no difficulty in assuming that the disposition has been communicated to the children in those cases where parents are attacked by a disease after the birth of the latter; since the disposition to this disease may have existed in the parents at the time or long before they gave birth to their children: and from what we said, §. 8. namely, that the hereditary disease, sparing the parent, can pass over from the grand-parents to the grandchild, we see clearly that the hereditary disposition can be communicated by parents to their children, though they themselves remain free from the disease. With respect to the other case, where parents have laboured under a disease before the birth of their children, we ask the question, How can it be proved, that, with the cure of a disease², the disposition to it has also been

(²) A few diseases perhaps excepted, which do not even at all belong to the hereditary ones.

entirely destroyed, so that it could not be communicated by the parents to their children? From experience, we know that children may become sooner or later the unfortunate heirs of all diseases under which their parents have laboured, at any period of their life.

Causes by which diseases become hereditary.

§. 10.

The most contrary opinions have been given by pathologists as to the question why and how it is that anomalies and diseases with which parents are affected, shew themselves in their offspring, and are often propagated through whole generations. These opinions differ from each other according to the different views which their propounders have of the act of generation, and of the proximate causes of diseases in general. The humoral pathologists and the solidists had each of them a different view of this subject; as also those who, like almost all the better physicians of modern times, sought the proximate cause of diseases in the solid as well as in the fluid parts of the organism. It would be superfluous—and the small compass to which we are for many reasons compelled to confine this tract, forbids us—to mention here, even if it were only historically, all those different opinions which often rested upon nothing but hypotheses: suffice it to say, that most of the ancient pathologists founded their opinion upon the well-known words of Hippocrates: “Semen genitale ab omnibus corporis partibus procedit, a sanis sanum, a morborum morbosum¹.” They took it for granted that the sperma of persons suffering under a particular disease is itself in a morbid condition, and of an anomalous composition; and, that it thus happens that the diseases of parents are transferred to their

(¹) De Morbo Sacro, cap. iii.

children at the moment of generation. Many celebrated pathologists of recent times maintain, that till the physiology of the act of generation, as well as that of the first formation of the embryo, are more rightly understood than at present, no correct opinion can be formed of the first causes of hereditary diseases; and a celebrated teacher and practitioner gives his opinion in the following words: —“*Densa enim caligine hæc pathologiæ pars profectò circumvelata erit, quamdiu totum generationis negotium et embryonis formatio atque incrementum in eâ quâ nunc circumdantur obscuritate latebunt. Quis enim intelligere potest, quomodo dispositio quædam morbosa à patre cum filio communicetur, qui non prius novi animalis ex duorum liquorum confluxu formationem, qui non admirabile ejus in utero materno incrementum evolutionemque probe perspexerit atque cognoverit?*” Also Portal, who perhaps of all writers of the present century has treated the subject of hereditary diseases the most largely, says, that there are in physics, and especially in medicine, a number of well-known facts, for which no satisfactory reason can be adduced, and these are among them²; and he consoles himself with saying, that he well knows the nature of hereditary diseases, though the causes by which they are communicated remain a secret to him. At the same time he quotes the well-known sentence of Cicero: “*Rerum eventa magis, quam causas quæri oportere; et hoc sum contentus, quod etiam, si quomodo quidquid fiat ignorem, quod fiat intelligo*”³.

§. 11.

May we be allowed here to add our own opinion on this point.

(²) “Il est en physique et en médecine surtout une multitude de faits bien reconnus, dont on ne peut pas donner une raison satisfaisante, et ceux-ci sont de ce nombre.” PORTAL, l. c. (³) De Divinitate, lib. ii.

However difficult it may be to explain how and in what manner hereditary diseases are transferred, still it is not difficult to comprehend why this is done. Why should not children, who in so many respects resemble their parents in their exterior and in their mental qualities, also resemble them with respect to the healthy or unhealthy constitution of their body¹. The difficulty only arises from our trying, with respect to hereditary diseases, to find out and explain how it is that such a thing takes place, and by what process. This also we often do in other respects, and ask, How does it happen at all that children so much resemble their parents? But this question, like that of the process of generation, belongs not so much to pathology as to physiology, the present state of which science does not yet admit of a satisfactory explanation of these points. All that we at present are able to conclude, if we must in some degree explain these phenomena, is, that on the part of the father the cause rests upon a morbid, *i.e.* anomalous condition of the sperma²,

(¹) The following are the words of the above-quoted teacher and practitioner: “Esse, inquit, vel omnium vel nonnullorum organorum talem rationem atque concatenationem, ut certò sub vitæ stadio a normali suâ evolutione, vel sponte, vel levi causarum externarum influxu aberrant, et in morbum abeant. Talis dispositio a parentibus in liberos descendere eodem modo potest, quo vultus, lineamenta, animique facultates, vel pathemata parentibus propria, filii hæreditate accipiunt, ita ut quo magis filius externâ conformatione similitudinem patris referat, eo magis hæreditariam in morbos quoque patris dispositionem ei inhærere observetur.”—Whatever is here said of the hereditary disposition, also relates, in the same sense, to the disease itself.

(²) It has been said against the supposition of a morbidly-prepared sperma, that such a thing has never yet been discovered in autopsy; but this does not refute the opinion of Hippocrates in all possible cases. Proceeding from the theory that the aura seminalis alone is sufficient for generation, it has been said, that the same is so volatile in its nature, that there could not be combined with it the idea of its mediating the transition of a morbid principle; but to see how untenable this objection is, we need only consider

even though it be only a dynamic alteration or modification of it. On the part of the mother, the communication of hereditary disease can be effected in different ways: Primarily, In the same way as from the father, at conception. Secondly, At a later period, during the process of the formation of the embryo, after the ovulum is descended into the uterus. Here, again, the communication can be effected in three ways: 1st, through the blood; 2dly, through the agency of the nervous system; and 3dly, through other connexions, which exist between the mother and the fœtus, and which, though not yet found out, cannot be entirely denied¹. That diseases can be transferred from the mother to the child through the blood as well as through the nerves, though even the most sharp-sighted anatomists have not yet discovered, or rather have not yet been able to lay bare, by means of the anatomical knife, any connecting blood-vessels and nerves between mother and child, is an opinion to which men like Hufeland² and Carus³ give their support.

Do children more frequently inherit the diseases of their fathers, or those of their mothers?

§. 12.

This question also, like that whether children more generally resemble their father or their mother, has given scope for controversy. Some writers say that children more frequently resemble their mother; and Haller observes, "In genere humano cæterum matrum similitudines mihi frequentiores videntur⁴." Others, and with

consider how volatile is the character of the contagion of many diseases; how often the perspiration, the breath, and even the exhalations of excretions, are the bearers of morbid principles from a diseased person to another.

(¹) Hufeland, von den Krankheiten der Neugeborenen, l. c. p. 14.

(²) L. c.

(³) L. c.

(⁴) Physiologiæ Elementa, lib. xxix. sect. 2.

them the celebrated Osiander, are of opinion that the similarity exists mostly between the children and the father¹; whilst, again, a third party decides that there is no difference in this respect, and that children as often resemble their father as their mother: and Haller himself says, in another place, “*Et frequentissimum est, eandem matronam alios liberos sui similes parere, alios patris*”². The latter opinion, both with respect to similarity and to hereditary diseases (for what refers to the former can also be said of the latter), seems to be proved by experience to be the more correct; for we very often see, in families where only one of the parents is affected with disease, some of the children healthy, and others diseased from their birth, or afterwards attacked by disease in proportion to their being more like the healthy or the diseased parent.

It has also been said, that certain diseases are rather communicated by the father, and others by the mother³: further, that boys more frequently resemble the mother, and girls the father. But neither of these opinions seems to be warranted by experience.

(¹) Osiander (*Handbuch der Entbindungs Kunst*: Tübingen, 1819: 2d Part.) even goes so far as to doubt the paternity of the supposed father, when there is no similarity at all between the child and him. Similar opinions are given by other authors.—See J. A. Millot, *Ueber die Zeugung*: also, Dr. Venetti, *Ueber Aehnlichkeiten und Unähnlichkeiten*.

(²) Again, Haller says, in another place in his *Physiology*, with respect to the lesser or greater similarity between children and their parents: “*Et mihi videtur, si pater major fuerit, plus de patre; si major mater, plus de matre superesse*.” According to Carus, the gender of the child depends upon the same cause.

(³) According to Cullen, *rhachitis* proceeds more from the father than from the mother.

Is it absolutely necessary that diseased parents should have diseased children?

§. 13.

According to all experience, this question must, decidedly, be answered in the negative. There exists no absolute necessity that the children of diseased parents should inherit the diseases from which the latter suffered: and as many children resemble neither their father nor their mother externally, and as others often shew, in their character and moral dispositions, not the least similarity to their parents, even before they have been influenced by education or other circumstances, so also it is a fact, that there are children born of unhealthy parents which are from their birth, and remain through their whole life, quite healthy⁵.

But there is no occasion to confine ourselves to the authority of experience: we can prove, in a rational way, that the children of diseased parents are not necessarily unhealthy themselves. We have seen in the last section, that if there be only one of the parents unhealthy, the children will be healthy or unhealthy according to their resemblance to that parent who is affected with disease, or to the other: in cases therefore like this, where only one parent is unhealthy, there is surely no necessity for the child inheriting the disease, as it may bend more entirely towards the healthy parent; and even in those cases where the child resembles the diseased parent in other respects, there is no absolute necessity for its resembling this parent in the state of health also; for, not to speak of remissions and intermissions of diseases, it is certain that no

(⁴) Haller (l. c.), speaking of the causes of the hereditary diseases, says, with respect to this question: "Difficultates hic auget, quòd ejusmodi vitia et peculiares notæ plerùmque in fœtus non transeant. Cæci ferè bene videntes pueros generant, claudi et manci integros."

diseased person feels at all times equally indisposed; and it is well known to every practitioner what favourable, though often very transitory, effects are produced in broken-down constitutions through mental excitement—how they frequently remove at once stagnations, accelerate the circulation of the blood, and rouse the torpid nerves.

When we apply this to the moment of conception, we shall find it comprehensible, that a diseased father or mother may have a child which, resembling him or her in every other respect, has inherited nothing of his or her disease. Considering this subject from another point, we come to the same conclusion. It cannot be denied that Nature works after a certain prototype: still boundless as she is herself, so endless also are her forms: wherefore all her works, though everlastingly wrought after the same type, still manifest themselves always as new beings. It is therefore certain that every new individual, however similar it may be in many points to its progenitors, is by kind Nature endowed, and that in a rich measure, mentally as well as bodily, with something which is new, and which has not existed in its progenitors. This new gift may possibly have been obtained by one individual or another in such an overbalancing measure, that, though the offspring of unhealthy parents, he may still be free from their complaints at his birth, and ever after.

We see, then, that it is quite rational to assume, and moreover confirmed by experience, that there exists, to the consolation of mankind, no absolute necessity for unhealthy parents always bringing forth children affected with the diseases of which they suffered themselves¹.

(¹) Compare also our Appendix, "On the hereditary tendency to depravities and crimes." The following remark seems to be here in its place:—
The reason why parents who appear quite healthy, and nevertheless so often
have

Importance of the knowledge of the hereditary diseases.

§. 14.

The knowledge of hereditary affections is of great importance to the diagnosis, prognosis, and cure of diseases². This is a point sufficiently known, and does not here require any further demonstration. But its importance extends farther; for not only the cure of single individuals, but the welfare of whole families, of whole generations, and often that of a whole population, depends upon a proper knowledge of these diseases. And thus it forms a part of medical police, and even of forensic medicine.

Hereditary diseases amongst animals.

§. 15.

We cannot conclude this section without making the following observation. It is proved, that among animals, also, diseases are inherited by the young from their parents, just as they resemble them in so many other respects. Thus, only to mention a few examples, it has been noticed that the dogs used in Kamtschatka for drawing sledges, and whose tails are clipped according to the custom prevalent in that country, often bring forth young

have unhealthy children, seems to be the more and more spreading custom of marrying late in life. For, to say nothing of the fact, that the foundation of many diseases, and consequently of the disqualification for having healthy children, is, from various causes, laid during the time before marriage, we must confess that it appears that man having passed a certain age is no longer fit for producing a healthy and vigorous progeny. Thus it is noticed by a very experienced practitioner and acute observer, that in several families where the parents had always been healthy and led the most exemplary lives before marriage, the children were nevertheless all rhachitic. The only reason to account for this was the late period in which their respective parents had married.

(²) “ Mille fois j'ai eu le plus grand regret d'ignorer l'histoire des maladies des familles qui étaient confiées à mes soins. Je ne doute pas, que cette connaissance m'eut été utile pour les traiter mieux.” PORTAL, l. c. p. 27.

ones with defective tails. The same is said of docked horses. J. Adams relates a case of a person having succeeded in breeding a whole flock of sheep with crooked legs¹.

Since this work has been in the hands of the printer, I have met with the following singular instance of the hereditary transmission of an accidental lesion.—A cat, while pregnant, had nearly the whole of one ear bitten off by a rat; and one kitten, still living, in the litter of which she was in due time delivered, had but one ear. This peculiarity has not, however, descended to another generation.

(¹) See especially Haller's *Physiologie Elementa*. l. c.

SECTION II.
OF HEREDITARY DISEASES SPECIALLY.

Consideration of those diseases which are chiefly reputed hereditary.

§. 16.

IN this Section we intend to enumerate and to consider more closely those diseases which the most renowned writers and practitioners have observed descending from parents to their children, propagating themselves through many generations; and which on this account should be exclusively considered as hereditary, and be distinguished from those which have erroneously, or by a few writers, and in a few cases only, been considered as such.

Hippocrates seems to have been of the opinion, that almost all diseases can become hereditary; and this opinion is particularly deduced from the following passage: “Ex pituitoso pituitosus, ex bilioso biliosus gignitur, ut ex tabido tabidus, et ex lienoso lienosus,” &c.² His opinion was adopted by almost all the early physicians, and many did even consider all fevers and inflammations as hereditary. Thus Procopius says, at least when he speaks of the hereditary disposition: “Si eo tempore parentes liberos genuerint, quo in acutum quemdam morbum erant proclives, eadem hæc morbosa corporis conditio in liberos propagari potest³.” and already, long before his time, the same was taught by Fernelius⁴. The latter, moreover, quotes a case of a woman having been attacked in the

(²) De Morbo Sacro, l. c.

(³) De Morbis Hæreditariis in genere, §. 53.

(⁴) Opera omnia, tom. i. §. 204.

middle stage of her pregnancy with a febris intermittens quartana, and who was afterwards delivered of a child which laboured from its birth, and for a long time afterwards, under the same disease. A similar case is related by F. Hoffmann; and several practitioners of more recent times assert that they have seen similar cases of febris intermittens: but S. G. Vogel¹, as far as concerns the febris quartana, not only doubts the truth of these facts, but, moreover, describes a case, which came under his own notice, of a pregnant woman labouring at the same time under dropsy and febris quartana, the latter of which disappeared at her delivery, and the child she then had was quite healthy and entirely free from fever. Many practitioners have observed that variola has been inherited by children from their mothers, who had been attacked by it during their pregnancy; so that they were born either bearing the marks which this disease leaves behind, or still affected with the disease itself. But these facts are all disbelieved by the most renowned physicians, at the head of whom stands the celebrated Joerg². Cases are also mentioned of the measles having been inherited.

§. 17.

Our own opinion on this subject is, that all acute diseases and fevers are to be excluded from the hereditary class; because we can comprehend under that denomination only those complaints, which are of such a nature, that, having been communicated by the parents to their children, accompany them through their life (those few favourable cases excepted where medical art succeeds in conquering them), and are by them again communicated to their own children; thus maintaining themselves

(¹) Handbuch der Pract. Arzneiwissenschaftenol, v. i. p. 83.

(²) Kinderkrankheiten. Leipzig, 1826. P. 397, sqq.

through many generations: the existence of acute diseases is, on the contrary, confined to a limited period. It is certainly true, that an acute disease, when it attacks the mother in a very high degree during pregnancy, for many reasons, often causes abortion, or the death of the child; but this is done without the latter labouring under the same disease as its mother. As respects the above-mentioned cases of the small-pox and measles having been inherited, we may justly maintain—granting the truth of the cases—that there was still no transition of the disease from the mother to the child; but that the latter became infected in a direct way by the contagion itself, in the same manner, and perhaps at the same time, that the mother was infected by it. That this may be the case—namely, that the contagion, penetrating through the body of the mother, can infect the child without even infecting the mother herself—we see distinctly in those cases³ where the fœtus has been infected with the small-pox, the mother having come in contact with small-pox patients without having herself caught the infection. Also, in the cases of febris intermittens—if we will not let them pass as rare exceptions—we may venture to maintain that the child did not receive the disease from the mother herself, but was affected by the same noxious influences in the same direct way as the mother.

Proceeding from this view, we must arrange the exanthemata and fevers, even in the cases above alluded to, with the innate, and erase them from the number of hereditary diseases; for though they have already existed in the mother, still they were not transmitted by the mother to the child, but merely acquired by the latter from the same source whence the mother acquired them⁴. (Vide §. 3. §. 4.)

(³) See the above (§. iv.) quoted work of Graetzen.

(⁴) We cannot leave this important subject without making the following
observa-

Though we exclude all acute maladies and fevers from the class of hereditary diseases, we must still grant that a certain disposition, if not to single forms of acute diseases, at least to their species generally, may often be so far inherited, as they depend upon the habit of body, which is so frequently hereditary; *i.e.* the *constitutio fortis robusta sthenica*, which disposes to inflammatory diseases; and the *constitutio debilis gracilis asthenica*, which is not only subject to chronic nervous complaints, but also to different nervous fevers. These constitutions, if inherited, will certainly more frequently than others, and under less effective outward influences, be attacked with acute diseases and fevers.

§. 18.

Having excluded all acute diseases from the hereditary class, we must now enumerate those which most frequently seem to be propagated by inheritance. The first that present themselves to our observation are all *deformities of the body*, of whatever kind and nature they may be, and wherever situated, whether in the bones or muscles, in the trunk or in the extremities, and whether they consist in a deficiency or in a redundancy, as superfluous fingers, &c. The writers of all ages have noted so many examples, and a great number of them come almost daily to our own notice, that we need not enlarge this little volume by numerous quotations. Everybody has had occasion to observe that the children

observation: it is perhaps not at all incorrect, to assume that all those diseases which we know to be propagated by infection are, in those cases where we see mother and fœtus labouring under them, communicated by the former to the latter merely by contagion, in consequence of the close connexion which exists between them; just as any other individual receives the contagion from a person labouring under a contagious disease. And this is quite different from hereditary communication, which is founded upon the doctrine that children become the counterparts of their parents.

of hunchbacked parents very often become themselves, sooner or later, hunchbacked, even when the deformity is not founded upon a general disease (*viz.* *rhachitis*—of which afterwards): and we cite the following cases only on account of their being so remarkable. Mauriceau relates a case of a lame man having had three sons who were all lame. Borelli, quoted by Rougemont, tells us of a well-made man who was three times married, and whose father had been lame. The children of this man by his three wives were all lame. Haller, and many other writers worthy of credit, have noticed cases of several members of a family through many generations having been born either with six fingers on one of their hands, or one of their feet provided with six toes. The celebrated Lorry relates the following remarkable fact:—"A General had been hit in a battle by a ball on the collar-bone; the middle of which was taken out; and the remaining portions grew to the soft parts surrounding them, leaving an empty space. His wife afterwards bore him a daughter who had the same defect in the collar-bone." In Blumenbach's Medical Library¹ we find the following:—"An officer had been wounded in the little finger of his right hand, in consequence of which this finger for ever remained deformed: he afterwards married; and all his children, male and female, were born with the like deformity in the same finger on the same hand." Let us yet cite the following remarkable case noticed by Gaubius:—"The little finger of a man began, from some cause or other, to grow inwardly, and became quite bent towards the palm of his hand. The eldest of his two sons, when at the age at which his father became affected with the deformity, observed that his little finger began to bend towards the palm: different remedies were applied, but

(¹) Blumenbach, *Medizinische Bibliothek*, vol. i. p. 130.

in vain. The second brother, fearing the same fate, began, long before the fatal period, to use all possible preventive means, but without effect. At the said period his little finger became bent, like that of his father and his brother¹."

§. 19.

According to the judgment of the most acute observers, we find, besides these deformities in the bones and muscles, that many diseases and morbid affections of the teeth and the hair are hereditary. There are whole families characterized by exceedingly strong and healthy teeth, which they preserve through their whole life; whilst in others no precaution can prevent the decay and early loss of them. There have also existed families, and some are still living, whose members became mostly (and that through many generations), at a certain and generally very early period of their life, bald-headed, however beautiful a head of hair they may have had before. In other families again we notice all the members becoming in the same way very early grey-headed; and this early canities has justly been reckoned by many authors among hereditary complaints. Morbid affections and anomalies which have their seat in the cutis, as warts, callosities (*i. e.* clavi), and corneous excreescences, have, in not a few instances, been observed as hereditary. The character of the cutis itself is decidedly hereditary; such as, a more strong and dry condition of it, with narrow pores; or a more tender, slackened one, with enlarged pores, which disposes to abundant perspirations. Also the disposition to abnormal sweatings of the feet is hereditary,

(¹) Dr. Little, who successfully presides at the Orthopædic Institution in London, very often observes the most remarkable instances of hereditary deformities in that Institution, as well as in his private practice, in this branch of our science.

and is perhaps sometimes the consequence of such an hereditary texture of the cutis. The different *nævi materni*, on the contrary, and also many anomalous tumours and pseudo-organizations, as, tumores, cystici, lipomata², steotomata, sarcomata, fungous excrescences, &c., occur, generally, rather as innate than as hereditary diseases.

Among the various chronic exanthemata, all of which were denominated, by the ancient writers, *impetigines*, we especially observe *lepra*, *herpes*³, and *ichthyosis*⁴, as hereditary; if indeed the great confusion generally existing among the ancients with respect to the denomination and description of these disorders, admits of a correct conclusion. Of the hereditary character of scabies opinions are divided.

§. 20.

Amongst other external, or so-called surgical diseases, we may mention ruptures (*herniæ*), which are inherited through many generations. Many competent writers have cited cases to prove this; and Richter saw several children, whose fathers had ruptures, suffering with them, they having arisen without any external cause, and quite spontaneously.

(²) *Adiposis*, *obesitas morbosa*, are also considered by competent writers as hereditary diseases. We have daily opportunities of noticing the fact, that there prevails in some families a disposition to get fat, whilst other families again are distinguished by the extreme leanness of their members.

(³) Graetzer relates, that D'Outrepoint treated a man who suffered from general herpes, whose children were all born with this disease.

(⁴) The rare disease, *hystricismus* or *hystrix*, called by Alibert "*ichthyose cornée*," is, according to those writers who have observed it, also hereditary.

See Tilesius *ausführliche Beschreibung und Abbildung der beiden sogenannten Stachelschweinmenschen aus der bekannten englischen Familie Lambert*. Alteuburg, 1802.

C. H. Schmidt *Descriptio Ichthyosis Cornæe congenitæ in Virgine observata, tabulis iii. lapid. illustrata*. Bremen, 1830.

Cophosis nervosa¹ and cataracta are the diseases of the ear and the eye which are mostly inherited; of the latter of which we cited a striking example, §. 6. Not so frequently as cataracta, but still often enough, amaurosis has been met with as hereditary, and also other complaints of the eye itself, as well as of its surrounding parts. Squinting is often inherited. Stahl relates the following remarkable case:—A soldier lost in war one of his eyes. He returned to his country, and married: his wife bore him a son, one of whose eyes was quite dried up, so that he was monocular, like his father².

§. 21.

Let us now turn our attention to those numberless complaints which are generally designated by the name of chronic diseases. But before we undertake to point out such of them as are believed to be hereditary, we must premise the following general observation. The most acute practitioners have found, that as all deformities and irregularities in the external parts of the body, so

⁽¹⁾ Cophosis nervosa also often occurs merely as a *family disease*; but surditas mutorni is always a *connate* defect.

⁽²⁾ A remarkable case of inherited nictalopia, which has been strictly investigated from official documents, and described by Cunier in a little pamphlet entitled “*Histoire d’une Héméralopie Héritaire depuis deux Siècles dans une Famille de la Commune de Vendémian près Montpellier, par M. Florant Cunier: Gand, 1838,*” is worthy to be quoted here. It is shewn in this work, that nictalopia (the author calls it héméralopia, though day-blindness, nictalopia, is distinctly spoken of) had been propagated during two centuries in the same family, from one generation to another; and that of 600 descendants of one ancestor, a great number were and are still afflicted with this evil; so that the same is spread over Vendémian, and some other neighbouring places, through this family alone. There exists no example of the evil ever having befallen a member of this family where both parents were free of it: whenever a child was afflicted with it, then surely either his father or mother had had the same complaint. It is further proved that the complaint was, in the greater number of cases, inherited from the father.

likewise all anomalies and varieties in the form and structure of the internal parts of the organism, are hereditary: and Portal justly observes, that in the treatment of patients whose ancestors are known to have died of some interior organic defect, we always ought to presume the possibility of the existence of a similar defect; and if the diagnosis be doubtful, we should, by a strict investigation, endeavour to find out whether our apprehension be well-founded or not. The same writer further says, that we should more frequently detect such hereditary interior faults, if we always knew the diseases which are hereditary in the family, and if we had more opportunity of performing autopsies in private practice³. In addition, he describes a great many cases of abnormal structure and anomalies in the different internal parts of the organism, which he had observed himself. Other authors chiefly compute as hereditary the organic defects of the brain, of the heart and the larger vessels (*viz.* aneurismata); and Lancissius says, with respect to the anomalies of the heart, that he saw an enlargement of the right heart in a man whose father, grandfather, and great-grandfather, were all known to have had the same abnormal structure of this organ.

We should here especially mention the following particular forms of the different classes of chronic diseases, and endeavour to point them out, partly for the frequency of their hereditary occurrence, partly with respect to the period of life in which they especially shew themselves (see §. 7.), and lastly, according to the relationship which they have to each other.

(³) This valuable remark might lead to some important practical result. The bodies of deceased relatives should be carefully inspected by careful operators, and the results minutely recorded, and duly preserved.

§. 22.

Primarily and chiefly we mention rhachitis, scrofulosis, and phthisis pulmonum, under which denomination we not only comprehend phthisis tuberculosa, exclusively called phthisis by modern authors (and which is, according to its nature, almost identical with scrofulosis, since they also consider this to be equally founded upon the formation of tubercles), but also every other consumption which proceeds from the lungs, and which has always been included by ancient writers under the name of phthisis; and which they merely distinguished one from another by their character, as phthisis ex hæmoptysi, phthisis florida, &c.¹ Scrofulosis and rhachitis, the well-known diseases of childhood, if inherited, can develop themselves very early; and Hufeland has seen some of the children of scrofulous mothers attacked with this disease at their birth, and others soon afterwards. The inherited phthisis, on the contrary, shews itself like any other phthisis, often in the age of youth: still, cases are not rare where this fatal disease appears at a much earlier period of life. Cases are recorded where the children of phthisical parents have died long before that period of life at which their parents had died. We will not trespass upon the patience of our readers by quoting many cases, for the purpose of authenticating what we have here stated concerning these

(¹) The ancient writers ascribe the hereditary character not only to phthisis ex hæmoptysi, but also to hæmoptysis itself, and to all other hæmorrhages. But it is well known that these are, in most cases, rather symptoms, than idiopathic diseases; and we therefore leave the hæmorrhages as well as other symptomatic phænomena unmentioned, supposing them respectively to be comprehended in those diseases of which they are the symptoms. One, fortunately a very rare disease, we must yet notice here, as being, according to the testimony of all writers, always hereditary: this is, the calamitous hæmorrhaphilia, an hæmorrhage which is in some persons caused by the most trifling wound, and which yields to no remedy and is always fatal; from which circumstance such persons have been called Bleeders.

three diseases, which are of daily occurrence. Practitioners even in the most ancient times had great apprehensions for children whose parents had died of phthisis².

Another not less frequent hereditary disease is epilepsy, which, as such, also appears very early: in proof of which numerous instances exist on record, and many more are daily observed. In conjunction with epilepsy we may mention mental diseases, all of which must, in all their different forms, be classed among those which most frequently occur hereditarily. Horn says, that a person does not so easily become deranged in his mind: there is always a peculiar disposition necessary to it; and, unfortunately, this disposition is in most cases inherited.

§. 23.

Of the cachectic and dyscratic diseases peculiar to manhood, most writers have observed that icterus, dropsy, hæmorrhoides, gout, and also lithiasis, are hereditary. Already, page 10, we have mentioned a case of hereditary icterus, which Kerkring observed; and many others have seen interesting cases of women, afflicted during their pregnancy with icterus, having been delivered of jaundiced children. Not less scarce are the cases where all the members of a family have been attacked by icterus at the same age; and an especially remarkable one is described by Boerhaave.

Speaking of hereditary dropsy, Rougemont, supported by the testimony of several credible writers, says that it is proved by numerous observations that the children of such parents as have died of dropsy became at a certain age also dropsical. Many cases have been noticed of

(²) Stoll, speaking of rhachitis, says, "Nunquam adhuc vidi, nec ab aliis visum legi, rhachiticos parentes proles progenerasse hoc malo immunes." *De Morbis Chronicis*, tom. i. p. 20.

dropsical women being delivered of dropsical children; particularly one case quoted by Hufeland, and observed by Olivier. Hereditary hæmorrhoides and gout are of too frequent occurrence to render it necessary to enlarge upon them. The same may be said of lithiasis; but still the following case, mentioned by F. Hoffmann, is worthy of notice:—The Lady of the Prince Moritz of Zeitz was afflicted with nephritis: she was delivered of a daughter, who from the moment of her birth suffered very great pains, especially when passing water. The child lived only three weeks. At the post-mortem examination there was found in the bladder a stone as large as the stone of a peach (*instar mali Persici*). Gaubius assisted at a lithotomy performed on a boy of ten years of age, whose father had twenty-five years before undergone the same operation. The father, upon seeing the stone taken from his son, assured them that it was quite like that taken from himself. Gaubius compared them; and found they were indeed like each other in every respect, except in size, the father's being somewhat larger than that of his son. Stahl also assures us that he never saw a person suffer from lithiasis whose father or some other near relation had not been afflicted with this same complaint or with gout¹.

Of the syphilitic dyscrasy, which we must now mention, we have to observe the following: all practitioners agree that the children of syphilitic parents are always scrofulous, rhachitic, affected with exanthemata—are, in one

(¹) We have already observed, in §. 3, that hereditary diseases, which are in some way related to one another, are vicarious to each other; and this is particularly to be understood of the last-mentioned complaints. According to this, it is possible that the father may suffer from hæmorrhoides, and the son from dropsy; or the first from gout, and the latter from the stone: but still, in these cases, the dropsy as well as the stone must be considered as hereditary.

word, atrophic and cachectic; and, that they are often afterwards attacked with hydrocephalus. They further agree, that syphilitic women, if pregnant, are subject to abortion, and also are often delivered of still-born children, frequently already in a state of putrefaction. But opinion has always been divided with respect to the question, whether it be the syphilitic poison itself, or the unaltered syphilitic dyscrasy of the parents, which may be either inherited, or afterwards contracted by the foetus in utero from the mother. Each of these opinions is defended by men of considerable authority. For our own part, we must confess that the reasons adduced by those who declare for the hereditary character of syphilis are very strong; and the facts they mention in support of their opinion very striking, and seemingly analogous to those which have come under our own notice.

One more complaint, which is frequently hereditary, (and which, on account of its so often attacking childhood, we should properly have mentioned before this,) may here find a place; namely, helminthiasis. It is a fact, which is proved by daily experience, that the children of parents who are infected by intestinal worms (especially *ascaris vermicularis* and *ascaris lumbricoïdes*) are also attacked with these parasites, often at a very tender age, when they cannot have been caused by any noxious influences; and sometimes, even from their very birth.

The author of this Essay had himself frequent opportunities in the Hospital for Diseased Children in Berlin, under the direction of the celebrated Professor Dr. Barez, to assure himself of the hereditary character of this complaint, as well as of that of many other diseases; as rhachitis, scrofulosis, &c.

§. 24.

Of the diseases which are peculiar to old age we must particularly notice apoplexy, as a frequently occurring hereditary evil. Numerous instances shew, incontrovertibly, that those whose fathers have died of apoplexy are liable to be themselves carried off by the same disease. But apoplexy, even where the disposition to it has been inherited, appears only at an advanced period of life.

§. 25.

The different maladies peculiar to the other sex, according to the opinion of the most skilful observers, frequently occur hereditarily. Nothing is of more frequent occurrence, says Stahl, than to see all the different irregularities of the menses, pregnancy, puerperium, the milk, &c., that had taken place in the mother, appearing also in the daughter.

Before we close, we must mention one other complaint which also is often hereditary; namely, the chronic fœtor oris, which does not appear to be produced by any visible local cause.

Thus much of the particular hereditary diseases, and the history of their occurrence. Some of them, whose frequent hereditary appearance has been disputed by most, or whose hereditary character has been entirely doubted by many authors, we have intentionally omitted. But should we have left unnoticed any of the more important diseases, we hope to obtain the pardon of the kind reader, upon the plea, that it cannot have been in our plan (as already observed in the Preface) to exhaust in this short sketch so extensive a field as that of hereditary diseases.

APPENDIX.

ON THE INFLUENCE OF THE INTERMARRIAGE OF
RELATIONS.

(Being a Note to page 2.)

Doubts have been entertained by some learned commentators as to the passages alluded to at page 2 having any application to Intermarriage. Fry, and especially the learned Sir William Jones, have strongly insisted that this is not the case. Whether their opinion be correct or not, it is very certain that there exists all but an universal horror of marriage within a few of the nearest degrees; which, whatever may be the precise meaning of the verses in question, must almost irresistibly lead to the conclusion, that it is founded on a divine command of the highest antiquity. It is not, however, as a religious and moral, but as a physiological question, that we are here to consider the subject of Intermarriage.

There are strong reasons for doubting the validity of the notion, that mere intermarriage tends to produce physical or intellectual deterioration of the offspring. It is obviously one of those questions which cannot be decided by a small number of cases. Statistics must be appealed to for a perfectly satisfactory answer. The term 'breeding in-and-in,' which is applied by farmers to the multiplication of stock from very near relations—as, for example, from brothers and sisters, and from parents and their own offspring—is often liable to be complicated with other influences besides the mere fact of nearness of relationship. In the case of obtaining progeny from parents and their offspring, which is perhaps the more common case, the progressive deterioration from age of one of the parents introduces a distinct but very important element to complicate the inquiry.

Again, where this mode of breeding is had recourse to, it is generally for the avowed object of maintaining, in its strongest characters, some peculiarity which is highly esteemed either for appearance or use. Now, this peculiarity, so far from being necessarily an approach to the perfect character, not only may, but often really does, depend on some imperfection or weakness. In such cases, it is not the nearness of connexion, but an independent cause of degeneration which should be recognised as producing the evil when it occurs. The fact, that some justly-valued and superior varieties of animals have been long preserved in well-merited estimation, though confined to a very few individuals, seems to be conclusive against the necessarily deteriorating influence of close breeding; the validity of which is not to be set aside by the production of other cases in which the very characteristic to which value is attached is really a condition of disease and imperfection. Some of the diminutive and stunted varieties of the dog are a complete illustration of this remark. Thus, the disproportionably large cranium of some of the spaniel lap-dogs is manifestly allied to the disease called "water in the head" in children. A similar observation would apply to the tendency to the production of an inordinate amount of fat, which has been made a principal object in the management of their stock by some farmers. Notwithstanding the tendency to the production of debility or disease which often attends the artificial system of close breeding, some strong arguments in favour of it may be drawn from the results, both general and individual, which have been obtained in other cases. The low estimation in which a mongrel of any species is held, furnishes a practical demonstration of the almost invariable degeneracy which results from the careless, inattentive deviation from this principle.

There are, however, but few species of inferior animals

in which a long line of ancestry, with their individual characters, can be made out for an extended series of years.

The Arabs, who, it is said, can trace their most valuable horses to the time of Mahomet, have continued to maintain the value of their studs, whilst they most carefully reject the smallest crossing. In this country, the most valuable horses may be traced in stud-books for about 200 years; and although fleetness is made the principal object of the breeder's ambition, which must generally be incompatible with great weight and strength, many of these very horses have been remarkable for their powers of endurance, strength of constitution, and length of life — characteristics of healthy vigour, which they have transmitted to many generations. Both the celebrated Childers and Eclipse were descended from a horse of remarkable strength, the offspring of parent and foal; and the descendants of these horses, which still maintain the highest estimation, afford numerous instances of very close breeding. There is a peculiar breed of cattle which is supposed to have existed in Northumberland for upwards of a thousand years, which maintains its characteristics unchanged, and is remarkable for vigour and beauty. The whole herd is kept within restricted limits as to number and space; and when the well-known habits of these animals are considered, there can be no doubt that the closest breeding has been in continual operation. Numerous similar illustrations might be adduced; but none can be stronger than those which have just been mentioned. We may therefore quit the inferior animals, and ascend to man.

We here find the subject so complicated with the dicta of authorities and the influence of ecclesiastical laws, which have produced so general and so strong a prejudice, that it is difficult to obtain a conclusion legitimately deduced from facts.

It may, however, be stated, as the result of extensive inquiry amongst different individuals who have had ample opportunity for observation, which they made without reference to the question under consideration, that in different parts of the globe, and in different varieties of mankind, those groups or classes which furnish the best specimens of human beings are precisely those in which mixed marriages had been habitually excluded, whilst intermarriage within very narrow limits had prevailed. On the testimony of an individual who had long resided on the Barbary Coast, there is a remarkable contrast between the mixed inhabitants of maritime towns and the natives of the villages in the interior, who belong to a stock unmixed from time immemorial. Whilst these exhibited the finest specimens of the human figure, with corresponding intelligence; the people on the coast were obviously degenerated.

Another gentleman who had resided and travelled in the East Indies, when questioned as to the varieties of man which had fallen under his observation, pointed out, as the finest examples, the Mahometan inhabitants of a particular district: and on further inquiry, it appeared that these people had long strictly abstained from all intermarriage with other people—a circumstance which could scarcely fail to have promoted those close family intermarriages which the laws and usages of the disciples of Mahomet have sanctioned.

It is well known, that in the small islands scattered over the Pacific Ocean—in which, from physical character, language, and traditions, it is evident that the inhabitants are mainly and essentially composed of one variety of man, viz. the Polynesian branch of the Malay—the Chiefs in each island compose a distinguished class of the same people, the families of Chiefs being constantly kept up by marriages within its limits. As political differences tend

still further to restrict the intermarriages of this comparatively small class, very close family marriages are unavoidably frequent; yet, so far as information has been gained, the families of Chiefs in all these islands exhibit, in physical and intellectual characters, a very marked superiority over the other classes; notwithstanding that the latter are very frequently receiving accessions, the result of alliances with the higher class, from which such mixed progeny are excluded.

The North-American Indians, in their physical characters, have often been held up as admirable specimens of man; mental imbecillity, bodily deformity, and even diminutive stature, being rarely met with.

Amongst this people, split up into various tribes and sections of tribes, it is ascertained, upon Indian authority as well as that of travellers, that very close intermarriages are frequent.

There are several districts in Europe in which striking physical characteristics are so distinctly marked and limited, that it is impossible not to infer that the race has been kept up by a long series of intermarriages, without any indication of disease or degeneration. This is said to be particularly the case at Newhaven, near Leith; the inhabitants of which place have, from time immemorial, been scrupulously select in their marriages; and are no less remarkable for their superiority in figure, and their great exemption from consumption and scrofula, forming a striking contrast with the neighbouring population.

Other fishing-towns and villages of Scotland, though of much smaller size, appear to resemble Leith in these particulars. In one of these places, inquiry has been instituted by a gentleman residing in the neighbourhood, and he ascertained that one quarter of the marriages were between first-cousins; but that no prejudice existed against these connexions, and that no failure in the

number or physical characters of the offspring had been noticed.

The origin and progress of the Jewish people afford the strongest and most authentic data on which this question can be discussed. Abraham married his half-sister; Isaac the daughter of his first-cousin; and Jacob his first-cousin; furnishing three near marriages in succession: and yet they became the foundation of a stock, which, if not gigantic, like the Anakims and their relatives of Gath, does not appear to have been deficient in any physical respect, but, on the contrary, has continued to furnish to the present day numerous examples of various excellence.

Intermarriage appears to have been sought for its own sake, since it is evident that the family of Laban were not free from idolatry. The fact that the father of Moses married his own aunt is a proof that near intermarriage took place during the period of Egyptian bondage; and the advanced age and bodily vigour, not of Moses only, but of Aaron and Miriam, his brother and sister, shew that deterioration was not necessarily produced.

Again, we find Moses, after the giving of the Law, enjoining and recording, as instructive examples, the near intermarriage of ten persons in one family. Several similar marriages are recorded in different parts of the Jewish History, without the slightest remark from which it can be inferred that they were, in any respect, regarded as objectionable. On the contrary, it is evident that they were well esteemed; and the practice of the Jews, in the present day, not only shews that the same views have been handed down to the latest posterity, but their average health, longevity, and intelligence, under every circumstance of climate and mode of life, and even in opposition to many adverse influences, are powerful evidences that the dread of intermarriage of relatives, on physical grounds, is as futile as that of many other superstitious fears.

But it is urged, that medical men of deservedly distinguished reputation have given it as their opinion that near intermarriage produces degeneration, and more especially failure of sight and hearing, scrofulous affections, and derangement or deficiency of the intellect. That such authorities are highly respectable is not to be questioned; but the weight of the opinion must, after all, be estimated by the data from which the conclusion has been drawn. It does not, however, appear that these authors have stated the facts on which their opinions are based.

With regard to some of these authorities, it has been evident, on careful inquiry, that the prevailing belief has been adopted as admitted truth, especially when a few individual cases had been observed in confirmation of its accuracy.

That such examples do occur, no one can dispute; but there is no proof that they in any respect differ from the ordinary cases, either of hereditary disease, or of deviations from the healthy and perfect state occurring originally in other circumstances.

It seems to be perfectly reasonable that examples of the kind alluded to should present themselves in the practice of medical men who have devoted special attention to those affections in which hereditary causes operate; and when writing on the subject of their special province, rather than on that of the influence of intermarriage, they can scarcely fail to recur to them, as supporting previously admitted opinions.

In confirmation of this remark, it may be stated, that, on pressing the inquiry in more than one instance, not only has the case proved to have been as above explained, but facts in favour of the opposite opinion have been brought into notice. After all, observation, and not authority, must decide the question.

It may, however, be allowable here to adduce, as counter

authority, the fact, that a distinguished medical man, who for many years has been engaged in the most extensive practice in that particular department of his profession the most likely to afford him the opportunity for observing parents and their offspring, when particularly applied to for cases in corroboration of the prevailing opinion, had none to produce ; but immediately offered a strong case of the opposite character, with which he was intimately acquainted, and in which, for three, if not four generations, there had been a succession of marriages of first-cousins without any symptom of the assigned effects being produced. It is a fair application of mathematics to physiology, to assume, that if near intermarriage be a true cause, its effects ought to be produced in the ratio of the squares of the number of marriages : consequently, the occurrence of several such marriages in succession should more than counteract any vigour of constitution, which, in its transmission, might counteract the injurious influence of a single intermarriage.

It is obviously difficult to collect cases to prove the influence of continually avoiding intermarriage. Some examples have already been adduced in which distant connexions prevail ; but the conditions of the offspring are liable to be influenced by so many other causes, that conjectures rather than conclusions are to be drawn from them. It is, however, well worthy of notice, that the inhabitants of New Holland are subjected to a law, to the observance of which they are confined by penalties and the most superstitious reverence, which forbids the marriage of cousins. Whether we regard the physical or intellectual characters ascribed to this race, the advocates for restrictions on intermarriage can find little in the example of the New Hollanders to support their views. On the contrary, it seems pretty evident, that whilst the causes that really tend to influence succeeding generations

for good or for evil, and more especially that of hereditary predisposition to disease, demand far more attention than they now receive, it is little short of absurd to rely upon prohibitions which appear, on investigation, to be foreign to the subject, and which have evidently been originally introduced from interested or superstitious motives.

ON THE HEREDITARY TENDENCY TO DEPRAVITY AND CRIME.

(Being a Note to page 20.)

DR. GALL relates the two following remarkable cases, on which suicide occurred hereditarily. M. Gauthier, owner of several warehouses in Paris, left to his seven children a property of two millions of francs. They all remained in Paris and its environs, where they lived upon their property, which some of them even increased by commercial transactions. Not one was visited by any material disaster, and all enjoyed the best state of health. They all had sufficient to live upon, and were highly esteemed; but every one laboured under an inclination to commit suicide, to which they yielded in the course of thirty or forty years: some hanged, some drowned, and others shot themselves. The last but one invited on a Sunday a party of sixteen persons to dine with him. When dinner was served, the host was suddenly missing; and having been everywhere called and looked for in vain, he was at last discovered hanging in a barn. Only one hour before he had been giving orders to the servants with the greatest composure of mind, and had cheerfully conversed with his friends. The last of the seven, who was the owner of a house in the Rue de Richelieu, having raised it by two stories, at once conceived the idea that the expense had ruined him. Three times he tried to destroy himself, but was each time prevented from accomplishing it; however, he at last succeeded in shooting himself. The amount of

his property, after the payment of all liabilities, was found to be 300,000 francs. He destroyed himself at the age of forty-five years.

Another case, related by Dr. Gall, is the following:—A person committed suicide at Paris. His brother, who was present at the funeral, when seeing the corpse, called out, “What a misfortune! My father and my uncle have both destroyed themselves: my brother has followed their example: and I myself was, during my journey here, more than twenty times hardly able to withstand the inclination of throwing myself into the Seine.”

To these facts the writer of this Essay may be allowed to add a case equally remarkable; for the truth of which he can vouch, as he was highly interested in it, and is able to describe it with all its particulars.—Whilst yet in B——, in Germany, I was visited by a man whom I well knew: he was accompanied by a handsome lively youth of about eleven or twelve years of age, whom he introduced to me as the son of his sister in L——; requesting me, at the same time, that I would allow the youth to call now and then upon me, for the purpose of letting me judge of the progress he was making at school; and that I might also otherwise superintend him, since he himself (his uncle) was not competent to the first, and prevented by his avocations from undertaking the latter. He added, that his brother-in-law, the father of the youth, having been unfortunate in business, destroyed himself; and that, to ease the condition of his sister, he had resolved to bring the boy to B——, and let him finish his education there.

I readily undertook the charge. The boy often visited me; and I must confess, the more I knew of him the more I was captivated by him. He was an honest, cheerful, and obliging youth; he made daily progress in his studies; and was beloved by all his teachers in the school. He became so dear to me, that I felt daily a necessity of

enjoying his company in the evening hours. Thus passed several years, when at last the boy received the holy rite of Confirmation; and leaving the school, he was, according to his own inclination, bound as an apprentice with a respectable tradesman; and I soon learnt that his master had every reason to be perfectly satisfied with him. Many changes in my own circumstances were the cause that I afterwards saw this youth less frequently than before; and, as is natural in a large city, I soon almost entirely lost sight of him, so that I had for several months neither seen nor heard any thing of him. One day, happening to be in the neighbourhood of the establishment where the youth was apprenticed, I could not help entering, with the intention of paying him a visit; well knowing at the same time that it would produce an agreeable surprise. Upon my asking the master for the apprentice, he for a while looked at me with a sad countenance, and then said, "What, Sir, do you not know what a misfortune we have met with, about this boy? He has now been two months dead and buried: he has destroyed himself." "How was this possible?" said I, quite amazed—"this good boy! Perhaps he had done something wrong, for which he was afraid of being severely punished?" "By no means," replied the master, with tears in his eyes; "on the contrary, he has always behaved in every respect so honestly, that I was delighted with him, and I loved him like one of my own children. About eight weeks ago he was in the forenoon occupied alone in the storehouse; and dinner-hour having come, and the dinner being ready, he was several times called without answering; upon which I went myself, to look for him; and there he was, hanging, by a rope round his neck, on a large hook in the wall, quite cold and stiff. There was no doubt but that he had hanged himself in an evil moment. We cannot imagine any reason that could

have induced him to such a step; and I cannot think otherwise than that he had inherited the inclination to commit suicide from his father."—The boy, at the time of his death, was not yet fifteen years old, and had not been a full year from school.

It cannot be denied that the tragical death of this youth, whose father had committed suicide, and who himself put an end to his existence in the fifteenth year of his age without any apparent cause, present indications, like those related by Gall, of an hereditary tendency or disposition to commit suicide: however, we can only draw a conditional and hypothetical conclusion.

As an example of the hereditary occurrence of moral depravities of another kind, and of their appearing sometimes as innate, we give the following fact; the parties connected with which were, like those in the foregoing case, well known to the writer.

When I was a boy, there lived in my native town an old man, named P——, who was such an inveterate thief, that he went in the whole place by that name: people speaking of him, used no other appellation but that of "the thief," and everybody knew then who was meant—for epithets, generally speaking, are of common occurrence in small towns. Children and common people were accustomed to call him by that name, even in his presence, as if they knew no other name belonging to him; and he bore it, to a certain degree, with a sort of good-naturedness. It was even customary for the tradesmen, and dealers who frequented the annual fairs in this place (which are there of a more mercantile character than in other countries), to enter into a formal treaty with him; that is, they gave him a trifling sum of money, for which he engaged not only not to touch their property himself, but even to guard it against other thieves.

A son of this P——, named Charles, afterwards lived in

B——, during my residence there. He was respectably married, and carried on a profitable trade, which supported him handsomely. Still, he could not help committing many robberies, quite without any necessity, and merely from an irresistible inclination. He was several times arrested and punished: the consequence was, that he lost his credit and reputation, by which he was at last actually ruined. He died, while still a young man, in the House of Correction at Sp——, where he had been confined as a punishment for his last robbery.

A son of this Charles, and grandson of the above-mentioned notorious P——, in my native town, lived in the same house where I resided. In his earliest youth, before he was able to distinguish between good and evil, the disposition to stealing, and the ingenuity of an expert thief, began already to develope themselves in him. When about three years old, he stole all kinds of eatables within his reach; although he always had plenty to eat, and only needed to ask for whatever he wished. He therefore was unable to eat all he had taken: nevertheless, he took it, and distributed it among his play-fellows. When playing with them, some of their playthings frequently disappeared in a moment; and he contrived to conceal them for days, and often for weeks, with a slyness and sagacity remarkable for his age. When about five years old, he began to steal copper coins: at the age of six years, when he began to know something of the value of money, he looked out for silver pieces; and in his eighth year he only contented himself with larger coins, and proved to be, on public promenades, an expert pickpocket. He was early apprenticed to learn a trade; but his master, being constantly robbed by him, soon dismissed him. This was the case with several other tradesmen, till at last, in his fourteenth year, he was committed to the House of Correction. Whether that Institution was fortunate enough to correct

this ill-fated youth, the writer of this Essay is unable to state.

This case, proves, as we have seen in the former examples, with respect to the disposition to commit suicide, that the inclination for stealing had been transmitted by inheritance from the father, to the son and the grandson; just as we find physical complaints and bodily diseases propagating themselves by inheritance from one generation to another. Similar instances of an inherited disposition to some moral defect, or to some mental aberration, are not at all rare, and have been noticed by many.

But, however striking these instances may be, still we must not be misled by them, to believe that there is an unavoidable necessity that the vices and immoralities of parents shall be inherited by their children, and that a man must necessarily become a slave to vice, and to the demons of despair, merely because he is under the fatality of being the son of a vicious or otherwise ill-fated father. Experience abounds in examples which distinctly shew the contrary in this respect, as well as with respect to bodily diseases. How often do we meet with cases in which unhealthy parents have children who are quite the contrary throughout their whole lives. Further, we must consider, that many, if not most, individuals are, by their birth, placed in a position which opposes the greatest obstacles to the free development of their mental capacities, and often even endangers the purity of their souls. Most of those great men, perhaps, who have acquired immortality by their high services to Church and State, to Sciences and Arts, were born in circumstances environed with difficulties, but which they conquered by the strength of their own will, which made way for them through the darkness of superstition, and removed those bars which checked their course; till at last, strengthened and encouraged more and more by continual strife and attainment

of victory, they obtained that position of mental independence in which the qualities of their minds could unfold themselves in their pure and shining brightness. Every man, with whatever fatal soul-endangering disposition he may have been born, is equally able to conquer the same, by the concentrated unremitting strength of his own will, and by a deeply-founded confidence in the assistance of the Almighty, the source of all that is pure and good; and thus every one is able to divest his soul of all impurity, and to let it shine in the original sanctity with which it streamed forth from the divine source:—and therefore every man also remains accountable for his own bad actions; for they are not the unavoidable consequences of necessity. The simple, sincere, and earnest belief in God drives away all thought of sin: but to forget God, or never to have known him, this it is which throws man into the arms of sin and despair. True, therefore, as is, on the one hand, the sentiment of Schiller, the greatest German poet, “This is the peculiar curse of evil, that it must continually reproduce evil”; so, equally true, and not less beautiful, is that which Calderon, another eminent poet, in his tragedy “Life a Dream,” puts into the mouth of King Basilius, speaking of Sigismund, and which we cannot refrain from quoting here, in conclusion:—

“Though his inward disposition
Has destined him to destruction,
Still he can avoid it;
Since the most obstinate fate,
The most ungovernable desires,
The most unfavourable stars,
Arc able only to direct the will,—
But conquer the will they cannot.”¹

(¹) Let us compare, herewith, our Essay on Hereditary Diseases, §. 12: and all those arguments which we there produced against the supposition of an absolute necessity for the inheritance of diseases (viz. that unhealthy

unhealthy parents should always, and in every case, engender unhealthy children), are certainly and justly applicable to the inheritance of moral depravities and crimes. But again, returning to hereditary physical defects, we believe that the same arguments which we endeavoured to explain against the absolute inherency of moral depravities may also be applied against the hereditary physical defects. Even with an existing disposition to numerous bodily diseases (particularly regarding nervous complaints, not excluding many others), a truly strong and firm will often enables us to prevent the transition from the disposition to a disease into the sickness itself; perhaps even altogether to destroy, by degrees, the already existing disposition thereto: not only, since it often lies in the power of any man who is conscious of a disposition to any peculiar disease to regulate his manner of life, so that, possibly, he may escape from an impending evil—and which the reflecting and religious man never fails to do; but since, indeed, man has been gifted by God with an extraordinary strength of mind, far greater than might be supposed at first thought, which often alone enables him to overcome and escape from many impending bodily diseases; and this, in a degree, by only willing not to succumb to their attacks, as altogether to suppress the breaking out of a disease, or to eradicate the disease itself which is already in existence, and to restore and strengthen his system in its former state of health. We often see, for instance, during the prevalence of epidemic diseases, that those generally escape from them who are strong enough to remain indifferent and without fear; while, on the contrary, those who are afraid are attacked by them, and fall a prey to their virulence.

Space does not permit us to cite other striking instances which confirm the truth of these arguments: but let us point out, in conclusion, the following excellent German Essay of a truly celebrated author:—J. Kant, *On the Power of the Mind to subdue, by the Will alone, any Morbid Sensation*: edited, and augmented with Annotations, by C. W. Hufeland: 3d edition. Leipzig, 1836.